DOCUMENT RESUME

ED 055 976 SP 005 332

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TITLE Critique of the Model Teacher Elementary Education Programs.
PUB DATE 71
NOTE 18p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Elementary Education; *Evaluation; *Performance Criteria; *Teacher Education; *Teaching Models
IDENTIFIERS *Model Elementary Teacher Education Programs

ABSTRACT

Four ideas concerning the Model Elementary Teacher Education Programs are developed in this paper: 1) the emphasis upon "performance criteria" in teacher education programs is valuable because behaviors are specified in terms of specific trainee skills; 2) the justification for specific performance criteria is shaky and there is no strong or emerging research base; 3) validation of the performance criteria in terms of the effects of such trainee behaviors upon student growth is recommended and this research should be part of the implementation of the model programs; and 4) additional comments of the models concern the types of performance criteria and the need for training teachers to use new curriculum packages. (MBM)

ED055976

Critique of the Model Teacher Elementary Education Programs

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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In this article I shall be critical of many elements in the Model Teacher Education Programs (Models). However, I do not intend such criticism to encompass any individuals or organizations. My criticism is directed towards teacher educators and teacher-education procedures in general. And such criticism is directed only at past practices. A major criticism is the lack of research on the relationship between a teacher's behavior and student growth. Such criticism is accompanied by suggestions for research within this area, research which can be conducted within the context of the Model programs.

SUMMARY

Four ideas are expanded within this critique:

1. The emphasis upon "performance criteria" in teacher education programs is valuable because behaviors are specified in terms of specific trainee skills.

2. But the justification for specific performance criteria is shaky; there is no strong or emerging research base.

3. Validation of the performance criteria in terms of the effects of such trainee behaviors upon student growth is recommended. Further, it is recommended that such research take place within the Model programs.

4. Additional comments on the Models: types of performance criteria, and the need for training teachers to use new curriculum packages.

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1. The Focus on Performance Criteria

The emphasis upon "performance criteria" for specifying desirable goals in a teacher training program is praiseworthy. Such denotable goals as "asking evaluative questions," and "providing reinforcement for student answers" represent a welcome shift from the use of vague objectives such as "providing meaningful experiences," "educating the whole child," and "providing for individual differences."

Performance criteria and similar terms dominate the model teacher education programs funded by the USOE. For example, the program developed by the Northwest Regional Laboratory stresses "instructional experiences that lead to both developement and personalization of competencies" (Schalock, 1968, p. 6). In the Michigan State Model, some 2700 modules are specified, many of which are evaluated in terms of trainee behaviors (Houston, 1968). The Massachusetts Model is explicit in requiring "the specification of instructional and program goals in terms of behaviors to be exhibited by the trainee" (Allen, 1968, p. 17). The Syracuse proposal claims that "the model program specifies its objectives in behavioral terms, provides situations where these behaviors can be learned, and when behaviors are manifest, assesses their quality and character in behavioral terms" (Hough, 1968, p. 23). The Teachers College Model developed 818 educational specifications (Joyce, 1968), and the Georgia Model has over a thousand performance specifications.

A major source of this focus on performance criteria was likely the large number of experimental studies which were designed to determine whether various training procedures could modify the behavior of teachers. These studies demonstrated that training procedures which focused on teaching denotable, specific behaviors were more effective than traditional

METHODS courses in changing teacher behavior as measured by systematic observation. Hence, an emphasis on specifics--i.e., performance criteria--seemed desirable to the planners of the model programs.

2. The Lack of Research on Teacher Performance Criteria

Although hundreds of teacher performance criteria are specified in the model programs, the programs do not describe how these particular criteria were chosen. None of the proposals contains a detailed review of the literature from which the model builders made their selections.

Sufficient literature of this type apparently does not exist. In two summaries of the USOE Model Elementary Education Programs the following sentence appears appears in identical wording: We simply don't possess adequate information in a number of areas, especially the relationship between a teacher's behavior and a student's learning, to adequately design programs (Le Baron, 1969, pp. 28-29; Klatt and Le Baren, 1969, pp. 25-26). A major point of this critique is that this sentence belongs at the beginning of any discussion of teacher education programs and should not be buried in the middle or near the end of a report.

The results of reviews of research which I have conducted on the correlational and experimental studies of teacher behavior and student achievement (Rosenshine, 1970a,b,c; Rosenshine and Furst, 1971) support Le Baron's assertion. In addition, the term teacher behavior had a limited meaning in those reviews, referring to the verbal and non-verbal interaction of a teacher with a group of students. Teacher behavior as reflected in the Models quite rightly encompasses a broader meaning, including such behaviors as selecting films, organizing study materials,

and other behaviors relevant to student learning which are not revealed simply by observing verbal teacher-student interaction. There appears to be even less study and less information about the relationship between teacher behavior in this broader meaning and student cognitive or affective learning.

But the Models are not limited to providing training in general instructional skills; they also cover teacher competencies in specific subject area instruction. In many of the Models the usual "methods courses" have been broken down into specific competencies, so that a teacher might be expected to demonstrate competency in teaching phonic skills or reading comprehension skills.

One might expect that a body of knowledge would have been developed on instruction in subject matter areas such as reading, mathematics, or map study skills. Unfortunately, hard knowledge in these fields is equally difficult to come by. The reviewers of subject area research in the Handbook of Research on Teaching (Gage, 1963) noted the lack of research on specific instructional procedures and called for more such research in the future. Unfortunately, their call has not been followed by substantive bodies of instructional research within any of the curriculum fields, as recent reviewers have noted (Cf. Fey, 1969).

The problem is not a lack of research per se. Hundreds of dissertations, experiments, and project reports are issued every year. However, there is little in these reports which can be applied with any assurance to teacher education. In most of these studies, the effect of one vague set of variables defined as a "method" or a "curriculum approach" is contrasted with the effect of another vague set of variables which comprise the alternative instructional procedure. (Travers, 1969.) Even if one procedure is more effective than the other, we have little specific

information on the instructional elements which might have been responsible for the difference. Thus, although many teacher performance criteria have been developed and are being taught, we lack sufficient justification as to whether they should be taught.

The Development of Performance Criteria. If adequate knowledge with which to design teacher education programs is lacking, what procedures have the developers of the Model programs used to develop their lists of teacher performance criteria? From an inspection of the proposals, it appears that the developers used a combination of sources: laboratory-based studies of human learning, the clinical wisdom developed in the study of interpersonal relations, variations of current educational mythology, the best guesses of experienced teachers and educators or teachers, and the variables which have been selected for use in systematic observational instruments.

Classroom observational category systems are frequently labeled as systematic because the variables observed tend to be specific and denotable (e.g., asks divergent question) rather than vague (e.g., promotes thinking) (Cf. Rosenshine, 1970d). These observational instruments merit special attention because they are so prevalent, and because terms such as "systematic observation" and "objective observational systems," and the fact that investigators report high coefficients of interrater reliability connote a type of scientism which is frequently mistaken for science.

The major problem in using systematic observational systems to train teachers is that although these systems focus upon specific, denotable behaviors, we have not yet determined the relationship of these behaviors (or sequences of behaviors) to measures of student growth. At

present, these tools are most useful for describing the teaching act rather than for specifying the teaching behaviors which should occur.

The variables which are selected for use in these systems appear to reflect the bias and interest of the investigator rather than existing knowledge of teaching. As McNeil and Popham have stated in a draft version for a chapter in the Second Handbook of Research on Teaching, "Those who value divergent thinking tend to provide for the collection of data which show the amount of divergent thinking allowed." The biases are clearest when one reads the discussion sections of reports which used systematic observation to describe teaching. Judging by the adjectives and the suggestions for teacher education, it seems that student talk is better than teacher talk, questions on a "higher cognitive level" are preferred to questions on a "lower cognitive level," divergent questions are preferred to convergent questions, student initiated talk is preferred to student directed talk, independent study is preferred to whole-class work, substantive exchanges are preferred to managerial exchanges, and rebuke "using public criteria" is preferred to rebuke not containing such criteria. Teacher training then becomes a vehicle for training teachers to emit the desired behaviors. "It is almost as if the designers of measuring device want more teachers to instruct according to the categories treated in their observational schemes rather than to produce desirable changes in learners" (McNeil and Popham, in preparation).

It is difficult to dispute the contentions of McNeil and Popham because the development of systematic observational systems has not led to increased research on the relationship between observed behaviors and student growth. Of the 65 classroom observational systems listed in the latest volumes of Mirrors for Behavior, no more than six

have been validated by relating observed behaviors to measures of student growth. Instead, some investigators have developed two or three systems, acting as if the development of observational systems was sufficient to improve teaching.

Of course, I cannot fault those in teacher education for proceeding as best they can in the absence of "hard data." But I am disturbed that many in teacher education may be satisfied with this state of affairs.

Feedback Feasibility, and Validation. There is a strong feedback component built into the Model programs. The term feedback has a wide meaning, and its specific application in the Model programs might be determined by inspecting the preliminary and short reports on the feasibility and modifications of the Models (Journal of Research and Development in Education, 1970).

In these reports, the evaluative criteria to be used in judging and revising the Models include costs, client acceptability, availability of human resources, organizational feasibility, ability of the program to accommodate changes, and pedogogical feasibility. Such feedback will be obtained through reports from officials of the school districts in which the trainees will be working, consultations with parents and teachers, observer judgments on the adequacy of the trainee's performance during training and on-the-job, trainee test scores on the performance specifications, and informal judgments by members of the local school districts on the adequacy of a trainee's performance or the adequacy of specific performance criteria for the teachers of their children.

Such feedback components seem extremely important, and the expansion of the type and scope of feedback in the Models appears to be a

valuable and important step. However, in the volume on feasibility, whenever pedogogical feasibility or similar terms were used, the reference was primarily to evaluation of the modules in terms of the trainee competency which will be attained, trainee enjoyment and preference, observations and interviews. In only one report, that of the University of Wisconsin (DeVault and Kean, 1970), was any mention made of evaluation in terms of student growth, or research on the effects of such teacher training upon students.

As was noted at the beginning, other reviewers of the Models have commented on the lack of a data base for designing teacher performance criteria. I believe it is noteworthy that in the reports on feasibility the term "evaluation" was used frequently; however, with one exception, there was no mention of the need to obtain data on the importance of these performance criteria for student growth. It is my contention that there remains a gap between studies of the feasibility of the Models, and studies on student learning in school settings which can provide a data base for the development and revision of the performance tasks. In other words, none of the Model programs has provided for obtaining feedback which can be used to enlarge our knowledge about the relationship between a teacher's behavior (and other instructional variables) and student growth. I strongly recommend that the feedback base be broadened, and that data be obtained on the adequacy of elements in the Model program for enhancing student growth in affective and cognitive areas. Some methods for expanding this feedback base are discussed in the next section.

Another problem within the general area of feasibility is the lack of criteria by which partial success or partial failure can be judged. We need some procedures of determining those ends which are particularly

well attained by one Model as well as those ends which are poorly attained by some Models. Similarly, we need criteria for determining the effectiveness of components within different models. Presumably there is value in funding ten different Models rather than ten versions of the same general Model. If so, how will the differential value of different Models and different components within Models be determined?

3. Instructional Research Within Teacher Education Programs

A critical question is whether the Model programs will generate new research on the relationship between instructional variables and student growth. Both pessimistic and optimistic conjectures can be developed.

The pessimistic conjecture is that teacher education programs develop through expert assertions about educational processes rather than through the results of scientific study of the relationship between educational procedures and educational ends. In this case, the Models represent the compilation of a number of popular processes: systems analysis, behavioral specification, systematic observational procedures, and specific skill training of teachers. No slur is intended against any of these processes, but the implementation of these processes by themselves will not contribute to the development of hard knowledge on instructional procedures.

The pessimistic conjecture is that the development of the Models will not be followed by instructional research; the institutions will not develop rational procedures for validating the hundreds of teacher competencies they have developed. Rather, the members of teacher education institutions will believe that they are being scientific because they are using systems analysis, systematic observation, high interrater reliability,

and references to Bruner, Ausubel, Guilford, Piaget, or whatever psychologist is currently popular.

The pessimistic conjecture would then forecast that teacher education institutions will continue to add unresearched innovations to their repertoire. I would conjecture that those processes involved or implied in Open Classroom, Humanistic Education, Affective Education, or Social Action Within Education will be among the new waves of innovations to affect the teacher education institutions.

The optimistic conjecture would note that the approach used in the Model Teacher Education Programs represents a welcome step toward the rational study of education. There is the hope that now that such data-based ideas as systems analysis, systematic observation, and behavioral specifications have been assimilated within the profession, we can turn towards the systematic study of educational procedures which contribute to a child's cognitive and affective growth. I believe that the actions of the Office of Educational Personnel Development may well contribute toward fulfilling such optimistic dreams.

Procedures for Instructional Research Within a Teacher Education Program

Earlier, two other reviewers were quoted as saying that we do not possess adequate information on the relationship between a teacher's behavior and student learning to design programs adequately. One would hope that those people engaging in various phases of educational research would have undertaken a fairly systematic attempt to build, develop, and disseminate knowledge about teaching and learning, but it does not appear that such development has taken place or is about to take place.

I am concerned about the apparently limited interest in instructional research held by the developers of the Model programs, the limited proposals for research in the Models, and the limited research proposed in the feasibility reports. No doubt some formal and informal research will emerge from these programs, but such research will focus upon methods of training teachers, not upon methods for instructing students.

I wish that an instructional research component on teacher behavior and student growth had been built into the Models; I wish that half as many programs had been funded and the rest of the money had been devoted to systematic research on classroom instruction.

Research activities which might contribute toward building a substantive knowledge of research about teaching include: developing specific and readable reviews on variables which might be useful teacher performance criteria and conducting process-product and experimental studies within the Model programs.

Process-Product and Experimental Studies. Process-product studies are correlational-type studies in which the teacher's frequency of use of specific behaviors (or patterns of behaviors) is correlated with measures of student growth. Such studies have usually been conducted using teachers who received no special training, but such studies can also be conducted after teachers have received special training (Cf. Baker, 1969).

Experimental studies are those in which one group of teachers receives special training and another group receives no training (or contrast training). Then the teachers in both groups are observed during

instruction to determine their fidelity to the training, and the outcome measures obtained on the students are compared.

The primary distinction between process-product and experimental studies in teaching appears to be that teachers in the experimental studies receive specific training in the variables of interest. However, even in experimental studies there is variation within each group in the behaviors of interest. If one wished, one could complete the correlations between teacher behavior and student growth within each of the groups in an experimental study. Thus, it is possible to conduct process-product studies using the data obtained from experimental studies.

The Model programs appear to be excellent vehicles for conducting research designed to validate (and modify) the performance criteria selected for the training of pre-service teachers. Many of the programs already contain one essential component for such research: criterion situations in which the trainees demonstrate the performance behaviors. In order to convert these criterion situations into vehicles for instructional research, the primary addition would be to provide the trainees with the same instructional material to use while teaching, and to obtain measures of growth from the students who are being taught. Experimental studies of this type are reviewed elsewhere (Rosenshine, 1970c), and the instructional materials and criterion tests which were used in completed studies might also be modified for use in the Model programs.

After a group of trainees in a Model program has taught the instructional unit (and the teacher and student behavior is recorded), the validity of the performance criteria can be tested in a number of ways:

1. Comparing the growth of students taught by trainees with growth of students taught by teachers who were not instructed in the performance criteria.

2. Using the trainee sample only, correlating the frequencies of use of the performance skill(s) with the measure(s) of student growth.

3. Using the non-trainee sample only, correlating the frequencies of use of the performance skill(s) with the measure(s) of student growth.

Although the above designs appear to be useful for testing the validity of specific performance skills, developers and potential users of the Models are also concerned about the validity of the package of skills. The package could be examined by having trainees teach a unit of two weeks or more in which (a) observations were made of the trainees' use of a variety of skills, (b) measures were obtained on student growth, and (c) the frequency of use of a number of skills (or sequences of skills) is related to various growth measures.

4. Additional Comments

Pre-Service Education and Curriculum Packages

One problem which apparently is not being considered in the Models is the relationship of the pre-service education programs to the curriculum-instructional packages which have been and are being developed. The Biological Sciences Curriculum Study program is an example of an older package. Newer programs include Individually Prescribed Instruction, Project PLAN, the elementary reading programs being developed and implemented at different Regional Laboratories, and the Engleman-Becker program. Reports on each of these programs discuss the need to provide teachers with specific training in the use of the programs. Yet, such programs have apparently received little consideration in the Model programs.

Perhaps one component which could be added to the Models or to any teacher education program is preparation for learning how to use new

curriculum packages. Such a component could include as objectives, developing receptivity to the new packages, learning to focus on the specific, key elements in a new curriculum package, learning to use new packages in a manner which is faithful to the intentions of the designers, and learning criteria by which modifications might be initiated and evaluated. I would expect that experience in learning to use two or three curriculum packages would help the pre-service teachers acquire a learning-to-learn set which would facilitate their use of packages curriculum when they are working as regular teachers.

Performance Criteria and Performance Criteria

If one inspects all of the performance criteria listed in the Model Proposals, one might divide them into two types: (a) those performance criteria whose attainment is evaluated in terms of the trainee's knowledge, and (b) those whose attainment is evaluated through systematic observation of the trainee's behavior.

Many of the knowledge-type criteria in the Model programs are similar to current practices in teacher education. These criteria are slight modifications of topics which appear in the course outline of most undergraduate education courses. For example, the following "performance specifications" appear in the Georgia Model Specifications (Johnson, Shearron, and Stauffer, 1969):

Number	Specification
3.20.10	Principal proponents of the principle of representative realism, particularly as expressed by John Locke.
3.20.11	Berkeley's own statement on idealism and his refutation of Locke's position.
3.20.12	The phenomenalistic position regarding the apprehension of reality (John Stuart Mill).
3.12.08	Drama from 1600 to present: in England, on the Continent, in Asia.

3.12.09	Drama in the United States; colonial America, nineteenth century, twentieth century.
3.12.10	Shakespeare, the playwright.
3.02.06	Interpretation of test scores.
3.02.07	Desirable test characteristics.
3.02.08	Gain experience in finding test information.
3.02.09	Standardized intelligence tests.
3.02.10	Special aptitude tests.

A second type of performance specifications, those which focus upon instructional behavior, appears to be closer in spirit to teacher specifications which are designed to facilitate "desired changes in children." Such specifications also appear in the Georgia Model. For example:

Number	Specification
3.07.21	Techniques for guiding pupils in interpreting and drawing conclusions from data gathered for inquiry.
3.07.25	Techniques to structure classroom situations in which pupils can discover and practice techniques of communication.
3.11.31	Conduct lessons that focus on developing (pupil) maturity of expression.

There is an advantage to each type of performance specification. In the knowledge-specification greater monitoring of the attainment of the knowledge is possible, and self-instructional units and remediation units can be developed. The behavioral specifications are designed to provide more systematic pre-service practice, and are presumably chosen because such teacher behaviors will produce the desired growth in children. It is also possible that the knowledge-specifications provide a base which facilitates learning of the behavior specifications.

Yet, the articulation between these two types of performance specifications is not clear to me. One of the unanswered questions is how

the knowledge-specifications are expected to contribute to the behavior-specifications. More important, what criteria have been established to show that the knowledge-specifications do or do not contribute to enhanced performance of the behavior specifications.

Allen, D. W., and Cooper, J. M. Model Elementary Teacher Education Program. Washington, D.C.: USOE Bureau of Research, 1968. U.S. Government Printing Office FS 5.258:58022.

Baker, E. L. Relationship Between Learner Achievement and Instructional Principles Stressed During Teacher Preparation. Journal of Educational Research, 1969, 63, 99-102.

DeVault, M. V., and Kean, J. M. An Economic Analysis of the Wisconsin Elementary Teacher Education Project: A Summary Report. Journal of Research and Development in Education, 1970, 3, 94-106.

Fey, J. Classroom teaching of mathematics. Review of Educational Research, 1969, 39, 535-551.

Gage, N. L. (Editor) Handbook of Research on Teaching. Chicago: Rand McNally, 1963.

Hough, J. Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers. Washington, D.C. USOE Bureau of Research, 1968. U.S. Government Printing Office, PS PS5.258:58016.

Houston, W. R. Behavioral Science Elementary Teacher Education Program. USOE Bureau of Research, 1968. U.S. Government Printing Office FS5.258.58024.

Johnson, C. E., Shearron, G. F., and Stauffer, A. J. Georgia Education Model Specifications for the Preparation of Elementary Teachers--A Summary. Journal of Research and Development in Education, 1969, 2, 52-64.

Joyce, B. R. The Teacher Innovator: A Program to Prepare Teachers. Washington, D.C., Bureau of Research, 1968. U.S. Government Printing Office FS5.258:58021.

Klatt, J., and Le Baron, W. A Short Summary of Ten Model Teacher Education Programs. Washington, D.C. USOE National Center for Educational Research and Development, 1969. U.S. Government Printing Office FS5.258:58036.

Le Baron, W. Systems Analysis and Learning Systems in the Development of Elementary Teacher Education Models. (Final Report USOE Bureau of Research Contract No. OEC-0-9-569006-3704(010).) Education Systems Department, System Development Corporation, 5720 Columbia Pike, Falls Church, Va. 22041, 1969.

McNeil, J. D., and Popham, W. J. The Assessment of Teacher Competence. In R. M. W. Travers (ed.) Second Handbook of Research on Teaching. (In preparation.)

Rosenshine, B. Teaching Behaviors and Student Achievement. Stockholm, Sweden: International Association for the Evaluation of Educational Achievement, 1970 (mimeo). (a)

Rosenshine, B. Interpretative Study of Teacher Behaviors Related To Student Achievement. USOE Project No. 9B-010. Philadelphia, Pa: Temple University, 1970. (b)

Rosenshine, B. Experimental Classroom Studies of Teacher Training, Teaching Behavior, and Student Achievement. Paper presented to the National Council ofor the Social Studies, November, 1970. Urbana, University of Illinois. (c)

Rosenshine, B. Evaluation of Instruction. Review of Educational Research, 1970, 40, 279-301. (d)

Rosenshine, B. and Furst, N. Research on Teacher Performance Criteria. Chapter 3 in B. O. Smith (Ed.) Research on Teacher Education: A Symposium. Englewood Cliffs, New Jersey: Prentice Hall, 1971, 37-72. (Expected publication: February, 1971.)

Schalock, H. D. A Competency Based, Field Centered, Systems Approach to Elementary Teacher Education, Washington, D.C., USOE Bureau of Research, 1968. U.S. Government Printing Office FS5.258:58020.

Simon, A., and Boyer, E. G. Mirrors for Behavior: An Anthology of Classroom Observation Instruments. Philadelphia: Research for Better Schools, 1970.

Travers, R. M. W. Educational Psychology. In R. L. Ebel (Ed.) Encyclopedia of Educational Research (Fourth Edition). London: Macmillan, 1969, 413-419.